


FORM PTO-1390 (REV 10-94)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 7524.23USWO
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) Unknown <b>09/890055</b>
INTERNATIONAL APPLICATION NO. PCT/CH00/00076	INTERNATIONAL FILING DATE February 10, 2000	PRIORITY DATE CLAIMED April 8, 1999		
TITLE OF INVENTION METHOD AND DEVICE FOR THERMALLY TREATING FLOUR FOR HYGIENIC PURPOSES				
APPLICANT(S) FOR DO/EO/US WUEST et al.				
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:				
<ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(I).</li> <li>4. <input checked="" type="checkbox"/> A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> is transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input checked="" type="checkbox"/> has been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US)</li> </ol> </li> <li>6. <input type="checkbox"/> A translation of the International Application into English (35 U.S.C. 371(c)(2)).</li> <li>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)) <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> are transmitted herewith (required only if not transmitted by the International Bureau).</li> <li>b. <input type="checkbox"/> have been transmitted by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input checked="" type="checkbox"/> An unsigned oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>10. <input type="checkbox"/> A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</li> </ol>				
<b>Items 11. to 16. below concern document(s) or information included:</b>				
11. <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.				
12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.				
13. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.				
14. <input type="checkbox"/> A substitute specification.				
15. <input type="checkbox"/> A change of power of attorney and/or address letter.				
16. <input checked="" type="checkbox"/> Other items or information: PCT/ISA/210; PCT/IPEA/409; Communication Regarding Foreign Specification				

531 Rec'd PCT/APP 25 JUL 2001

U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) Unknown <b>09/890055</b>		INTERNATIONAL APPLICATION NO. PCT/CH00/00076		ATTORNEY'S DOCKET NUMBER 7524.23USWO	
17. <input checked="" type="checkbox"/> The following fees are submitted: <b>BASIC NATIONAL FEE (37 CFR 1.492(a) (1)-(5)):</b> Search Report has been prepared by the EPO or JPO.....\$860.00  International preliminary examination fee paid to USPTO (37 CFR 1.492(a)(1)).....\$690.00  No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)).....\$710.00  Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(3)) paid to USPTO..... \$1000.00  International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4).....\$100.00				CALCULATIONS      PTO USE ONLY	
<b>ENTER APPROPRIATE BASIC FEE AMOUNT =</b>				<b>\$860.00</b>	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).				\$	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	6                      -20 = 0		X \$18.00	\$	
Independent claims	2                      -3 = 0		X \$80.00	\$	
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$260.00	\$	
<b>TOTAL OF ABOVE CALCULATIONS =</b>				<b>\$860.00</b>	
Reduction by 1/2 for filing by small entity, if applicable. Small entity status is claimed pursuant to 37 CFR 1.27				\$	
<b>SUBTOTAL =</b>				<b>\$860.00</b>	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).				+ \$	
<b>TOTAL NATIONAL FEE =</b>				<b>\$860.00</b>	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property				+ \$	
<b>TOTAL FEES ENCLOSED =</b>				<b>\$860.00</b>	
				<b>Amount to be:</b>	
				<b>refunded</b>	\$
				<b>charged</b>	\$
a. <input checked="" type="checkbox"/> Check(s) in the amount of <u>\$860.00</u> to cover the above fees is enclosed.  b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.  c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>13-2725</u> .					
<b>NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.</b>					
SEND ALL CORRESPONDENCE TO: John J. Gresens MERCHANT & GOULD P.O. Box 2903 Minneapolis, MN 55402-0903					
				SIGNATURE: 	
				NAME: John J. Gresens	
				REGISTRATION NUMBER: 33,112	



09890055 .091202 5/a  
Rec'd PCT/PTO 12 SEP 2001

Applicant:	Wuest et al.	Examiner:	Unknown
Serial No.:	09/890,055	Group Art Unit:	Unknown
Filed:	July 25, 2001	Docket:	7524.23USWO
Confirmation No.:	5754	Notice of Allow. Date:	NA
Due Date:	October 29, 2002		
Title:	METHOD AND DEVICE FOR THERMALLY TREATING FLOUR FOR HYGIENIC PURPOSES		

CERTIFICATE UNDER 37 CFR 1.10:

"Express Mail" mailing label number: EV077893945US

Date of Deposit: September 12, 2002

I hereby certify that this paper or fee is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box Missing Parts, Commissioner for Patents and Trademarks, Washington, D.C. 20231.

By:

Name: John Junkers

**PRELIMINARY AMENDMENT**

Box Missing Parts  
Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

In connection with the above-identified application, please enter the following preliminary amendment:

**IN THE CLAIMS**

Please cancel claims 1-7 and add new claims 8-15 as follows:

8.(new) A device for a thermal treatment of flour, especially feed meal or similar bulk goods, for hygienic purposes, said device having a heatable mixer, drying and cooling equipment, filters and discharge equipment, characterized in that

- the heatable mixer is a batch mixer (4) which is connected to a dryer/cooler (8) by means of a lock-like valve system (3), and
- the dryer/cooler (8) is connected by another valve system (11) to a second batch mixer (12) which has devices for adding the additives.

9. (new) The device according to claim 8, characterized in that the batch mixer (12) has a device (14) having nozzle bars.

10. (new) The device according to claim 8, characterized in that a heating duct (16) of a heating register (10) is provided for hygienic treatment or for cleaning of the device.

11. (new) The device according to claim 9, characterized in that a heating duct (16) of a heating register (10) is provided for hygienic treatment or for cleaning of the device.

12. (new) The device according to claim 8, characterized in that another drying/cooler (8') and/or batch mixer (12) acting independently of one another is provided.

13. (new) The device according to claim 9, characterized in that another drying/cooler (8') and/or batch mixer (12) acting independently of one another is provided.

14. (new) The method of thermal treatment of flour, especially feed meal or similar bulk goods, for hygienic purposes, by heating the bulk material in a mixer, followed by drying and cooling, characterized in that the heating as well as the drying and cooling are performed in batches, and the heating is performed in a batch mixer (4), and the drying/cooling is performed in a separate dryer/cooler (8), and additives are mixed into the dried and cooled bulk material in a downstream second batch mixer (12) arranged downstream, where the batch mixer (4) and the dryer/cooler (8) as an entire system are treated with hot air for hygienic purposes and/or they are cleaned with cold air.

15. (new) The method according to claim 14, characterized in that different batches of bulk material are treated thermally at the same time and independently of one another.

REMARKS

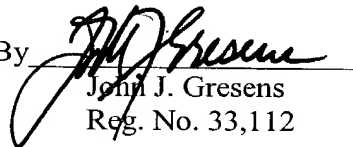
Applicants respectfully request that the preliminary amendment described herein be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicants' primary attorney-of record, John J. Gresens (Reg. No. 33,112), at (612) 371.5265.

Respectfully submitted,  
MERCHANT & GOULD P.C.  
P.O. Box 2903  
Minneapolis, Minnesota 55402-0903  
(612) 332-5300

Dated: September 12, 2002

By

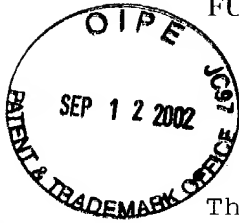
  
John J. Gresens  
Reg. No. 33,112

JJG:hb

09/890055

FU 218-P/WO

Rec'd PCT/PTO 12 SEP 2001



METHOD AND DEVICE FOR THERMALLY TREATING FLOUR  
FOR HYGIENIC PURPOSES

This invention relates to a method and device for thermally treating flour and similar free-flowing food and feed products according to the definition of the species of claim 1 as well as a device for carrying out this method. In particular, this invention relates to the thermal treatment of feed meal and flour.

Methods are known for hygienic treatment or sterilization of pellets or powdery substances that are used as human and/or animal feed products. This requires an adequate thermal and/or hydrothermal treatment to kill or at least inactivate microorganisms. This treatment is followed by cooling. In a continuous operation, this results in different holding times and uneven conditions at the beginning and end of the treatment operation.

International Patent WO98/43682 concerns a batch method of sterilizing granules and the like, where the product is heated to a sterilization temperature by means of steam in a chamber of a mixing apparatus. After this heating, the product goes to a second chamber beneath that, where it is subject to a holding time until it is discharged. The heat treatment of the product takes place with the product in a fluidized state. The two chambers are separated from one another by means of closable discharge openings. The volume of the second chamber is larger than the volume of the first chamber.

According to European Patent B 219,471, the mixing unit consists of a mixing chamber with rotating mixing paddles and a misting device in the form of a rotating line roller.

- 2 -

According to European Patent B 210,966, such a mixer may also have means for lateral feed of a cooling agent or a drying agent.

In addition, it can also be regarded as known to provide such units with additional cooling and drying equipment, where the suggested solutions have been based on rigid and thus inflexible combinations because in most cases continuous operation of large quantities of product is assumed. The above-mentioned types of equipment usually have long inclinations and transitions, which can lead to conveyance problems and temperature differences.

The object of this invention is to develop a method of thermal treatment of flour and meal for hygienic purposes, especially for thermal treatment of feed meal which will avoid the disadvantages of the state of the art and will also permit efficient treatment of even small batches. This object is achieved with the characterizing features of claim 1.

Another object of this invention is create a device for thermal treatment of flour, especially feed meal according to claim 4, for hygienic purposes.

Advantageous embodiments are disclosed in the respective subordinate claims.

The basic idea of this invention consists of first performing a thermal treatment, e.g., of feed meal in a mixer, preferably a batch mixer, at first in accordance with the state of the art, and then drying and cooling the treated product and only then adding sensitive additives to the batch in a subsequent mixer, where they are incorporated.

- 3 -

This not only allows an adaptation to different batch sizes but also avoids the problem of condensation and prevents damage to the additives during the thermal treatment. The latter also makes it possible to add smaller amounts of additives such as antibiotics. The equipment used for this may be set up in a modular fashion, permitting a great variation in designs.

The method according to this invention permits a very short set-up time, rapid product changes and reliable thermal conditions without the risk of condensation, thus eliminating a significant source of contamination.

This invention will be described in greater detail below in an embodiment on the basis of a drawing. In the drawing, the only figure shows a schematic diagram of a device for thermal treatment of feed meal for hygienic purposes.

This device has a depot 1 which is filled with the product to be treated (feed meal). The depot 1 is connected to a mixer 4 by a flap valve system 3, where the flap valve system 3 permits an airtight separation between the depot 1 and the mixer 4.

The mixer 4 is a batch mixer, preferably designed according to Swiss Patent 1333/94 or European Patent A 685,255 and having a mixer shaft 1 with mixing paddles as well as a device for steam feed 6.

The product outlet 7 of the mixer 4 is connected to a dryer/cooler 8 which is equipped with a filter 9 for exhaust air purification. Likewise, a heating register 10 is also provided. Both hot air for drying the product and cool air can be generated.

The dryer/cooler 8 is connected by another valve system



- 4 -

11 to another batch mixer 12 which is designed like batch mixer 4. A discharge device such as a discharge screw 13 is provided at the product outlet of the batch mixer 12 for discharging the treated feed meal 2'.

The batch mixer 12 also has a device 14 for adding solid or liquid substances which are sensitive to heat; this device has nozzle bars. Such devices are described in German Patent Application P19904994.7 by the present applicant, which was not published previously, and they may also include small component scales or the like.

To increase the capacity of the device, the dryer/cooler 8' and/or batch mixer 12' may also be connected in parallel.

The batch mixer 4 also has a heater 15, and the entire system can be sterilized with hot air through a corresponding heating management 16 or it can be cleaned with cool air. This guarantees a high level of cleanliness, short cleaning times and rapid product change. The parts of the device which come in contact with product have inclined surfaces which thus tend to collect less dirt (at the same time, they also yield the lowest risk of entrainment).

The feed meal 2 to be treated goes first into depot 1 and then goes through the lock-like valve system 3 in to the batch mixer 4, where the product 2 is heated, which is accelerated by thorough mixing of the product 2 by mixing paddles on the mixer shaft 5 (short dwell time), thus yielding a high degree of uniformity in conditioning. The resulting heating temperature to be set depends on the desired degree of sterility as well as other factors.

Due to the subsequent drying and cooling in a separate

- 5 -

dryer/cooler 8, not only is condensation largely prevented but also the next batch can already be treated in batch mixer 4. Corresponding closing devices (not shown) are provided between the individual components.

Product dust goes to the filter 9, and the purified exhaust air can be discharged to the environment or it can be reused in circulating air. This process is controlled in such a way that the resulting filtered dust is returned to the processed batch of product feed meal 2 without any risk of entrainment.

Then any required additives are added to the cooled and dried product 2' in batch mixer 12, and then the product is discharged by means of the discharge screw 13.



FU 218-P/WO

CLAIMS

1. A method of thermal treatment of flour for hygienic purposes, especially feed meal or similar bulk goods, by heating the bulk material in a mixer, followed by drying and cooling, characterized in that the heating as well as the drying and cooling are performed in batches, and

the heating is performed in a batch mixer (4), and the drying/cooling are performed in a separate dryer/cooler (8), and

additives are mixed with the dried and cooled bulk material in a downstream second batch mixer (12).

2. The method according to claim 1, characterized in that different batches of bulk material are thermally treated at the same time and independently of one another.

3. The method according to claims 1 or 2, characterized in that the batch mixer (4, 12) and the dryer/cooler (8) can be sterilized as an entire system with hot air and/or cleaned with cool air.

4. The device for thermal treatment of flour for hygienic purposes, especially feed meal or similar bulk goods, having a heatable mixer, drying and cooling equipment, filter and discharge equipment, characterized in that

the heatable mixer is a batch mixer (4) which is connected to a dryer/cooler (8) by means of a lock-like valve system (3), and

5. The device according to claim 4, characterized in that the batch mixer (12) has a device (14) with nozzle bars.
6. The device according to one of claims 4 or 5, characterized in that a heating control (16) is provided for a heating register (10) for sterilization and/or cleaning of the device.
7. The device according to one of claims 4 through 6, characterized in that another dryer/cooler (8') and/or batch mixer (12) which act independently of one another are provided.



PCT

WELTORGANISATION FÜR GEISTIGES EIGENTUM  
Internationales BüroINTERNATIONALE ANMELDUNG VERÖFFENTLICHT NACH DEM VERTRAG ÜBER DIE  
INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT)

(51) Internationale Patentklassifikation <sup>7</sup> : A23N 17/00, A23K 3/03, 3/00	A1	(11) Internationale Veröffentlichungsnummer: <b>WO 00/60958</b>  (43) Internationales Veröffentlichungsdatum: 19. Oktober 2000 (19.10.00)
(21) Internationales Aktenzeichen: PCT/CH00/00076 (22) Internationales Anmeldedatum: 10. Februar 2000 (10.02.00) (30) Prioritätsdaten: 199 15 908.3 8. April 1999 (08.04.99) DE (71) Anmelder (für alle Bestimmungsstaaten ausser US): BÜHLER AG [CH/CH]; Patentabteilung, CH-9240 Uzwil (CH). (72) Erfinder; und (75) Erfinder/Anmelder (nur für US): WUEST, Urs [CH/CH]; Holengartenstrasse 3 g, CH-9302 Kronbuehl (CH). WETZEL, Willi [CH/CH]; Sägestrasse 7, CH-9244 Niederuzwil (CH). (74) Gemeinsamer Vertreter: BÜHLER AG; Patentabteilung, CH-9240 Uzwil (CH).		(81) Bestimmungsstaaten: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO Patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Veröffentlicht</b> <i>Mit internationalem Recherchenbericht.</i>

(54) Title: METHOD AND DEVICE FOR THERMALLY TREATING FLOUR FOR HYGIENIC PURPOSES

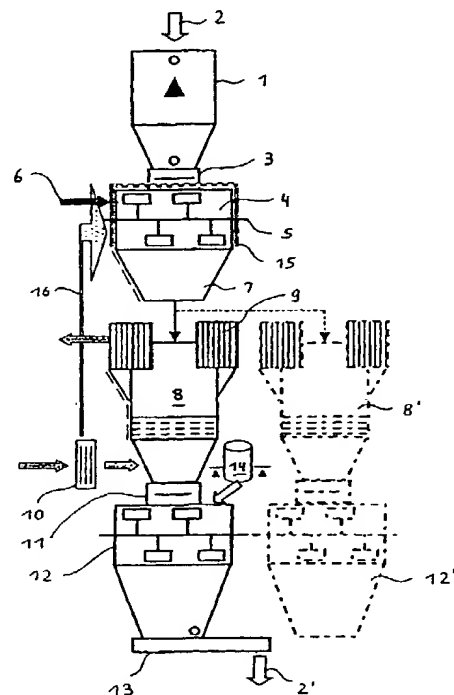
(54) Bezeichnung: VERFAHREN UND VORRICHTUNG ZUR HYGIENISIERENDEN, THERMISCHEN BEHANDLUNG VON MEHL

## (57) Abstract

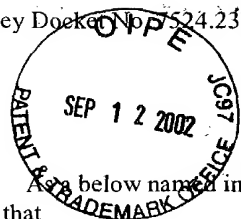
The invention relates to a method and a device for thermally treating flour, especially middlings, for hygienic purposes. The device consists of modules which are a first, heatable batch mixer (4) with a pre-mounted depot (1). Said batch mixer is connected to a drier/cooler (8) via a lock-like flap system (3). A second batch mixer (12) comprising a device (14) for adding additives and a discharge device is mounted behind an additional flap system (11) that is mounted behind the drier/cooler (8).

## (57) Zusammenfassung

Die Erfindung betrifft ein Verfahren und eine Vorrichtung zur hygienisierenden, thermischen Behandlung von Mehl, insbesondere von Futtermehl. Die Vorrichtung besteht modulartig aus einem ersten, beheizbaren Batchmischer (4) mit einem vorgelagerten Depot (1), der über ein schleusenartiges Klappensystem (3) mit einem Trockner/Kühler (8) verbunden ist, wobei diesem nach einem weiteren Klappensystem (11) ein zweiter Batchmischer (12) mit einer Einrichtung (14) zur Zudosierung von Zusatzstoffen sowie einer Austrageeinrichtung nachgeordnet ist.



Attorney Docket No. 7524.23USWO



MERCHANT & GOULD P.C.

United States Patent Application

COMBINED DECLARATION AND POWER OF ATTORNEY

I, the below named inventor I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that

I verily believe I am the original, first and sole inventor (if only one name is listed below) or a joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled: METHOD AND DEVICE FOR THERMALLY TREATING FLOUR FOR HYGIENIC PURPOSES

The specification of which

- a. ☐ is attached hereto  
 b. ☒ was filed on July 25, 2001 as application serial no. and was amended on (if applicable) (in the case of a PCT-filed application) described and claimed in international no. PCT/CH00/00076 filed February 10, 2000 and as amended on May 14, 2001 (if any), which I have reviewed and for which I solicit a United States patent.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on the basis of which priority is claimed:

- a. ☐ no such applications have been filed.  
 b. ☒ such applications have been filed as follows:

FOREIGN APPLICATION(S), IF ANY, CLAIMING PRIORITY UNDER 35 USC § 119			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)
Germany	199 15 908.3	April 8, 1999	
ALL FOREIGN APPLICATION(S), IF ANY, FILED BEFORE THE PRIORITY APPLICATION(S)			
COUNTRY	APPLICATION NUMBER	DATE OF FILING (day, month, year)	DATE OF ISSUE (day, month, year)

I hereby claim the benefit under Title 35, United States Code, § 120/365 of any United States and PCT international application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

U.S. APPLICATION NUMBER	DATE OF FILING (day, month, year)	STATUS (patented, pending, abandoned)

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

U.S. PROVISIONAL APPLICATION NUMBER	DATE OF FILING (Day, Month, Year)

I acknowledge the duty to disclose information that is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (reprinted below):

**§ 1.56 Duty to disclose information material to patentability.**

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclose information exists with respect to each pending claim until the claim is canceled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is canceled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

- (1) prior art cited in search reports of a foreign patent office in a counterpart application, and
  - (2) the closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.
- (b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and
- (1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim;
- or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
    - (i) Opposing an argument of unpatentability relied on by the Office, or
    - (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

- (c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:
- (1) Each inventor named in the application;
  - (2) Each attorney or agent who prepares or prosecutes the application; and
  - (3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.
- (d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.
- (e) In any continuation-in-part application, the duty under this section includes the duty to disclose to the Office all information known to the person to be material to patentability, as defined in paragraph (b) of this section, which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.



I hereby appoint the following attorney(s) and/or patent agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith:

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I hereby authorize them to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct Merchant & Gould P.C. to the contrary.

I understand that the execution of this document, and the grant of a power of attorney, does not in itself establish an attorney-client relationship between the undersigned and the law firm Merchant & Gould P.C., or any of its attorneys.

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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